

Title (en)  
Semiconductor light emitting apparatus

Title (de)  
Lichtemittierende Halbleitervorrichtung

Title (fr)  
Appareil électroluminescent semi-conducteur

Publication  
**EP 1995780 A1 20081126 (EN)**

Application  
**EP 08009482 A 20080523**

Priority  
JP 2007138213 A 20070524

Abstract (en)  
A light emitting apparatus with a combination of a plurality of LED chips (102) and a phosphor layer (103) is provided to significantly reduce variations in chromaticity and luminance. The plurality of semiconductor light emitting devices (LED chips 102) are disposed with a gap (L) therebetween, and the phosphor layer (103) is formed on the upper surface thereof to bridge over the gaps between the LED chips (102). The phosphor layer (103) may be uniform in thickness, but preferably less in thickness over the gaps between the LED chips (102) than on the upper surface of the LED chips (102). The phosphor layer (103) is continuously formed on the upper surface of the array of the chips (102) with no phosphor layer (103) present in between the chips (102). This allows for reducing variations in luminance and chromaticity which may result from the gaps or the phosphor layer (103) present in between the chips.

IPC 8 full level  
**F21K 9/00** (2016.01); **H01L 25/075** (2006.01); **H01L 33/50** (2010.01); **H01L 33/56** (2010.01); **H01L 33/62** (2010.01)

CPC (source: EP US)  
**H01L 25/0753** (2013.01 - EP US); **H01L 27/15** (2013.01 - US); **H01L 33/50** (2013.01 - US); **F21K 9/00** (2013.01 - EP US); **H01L 33/505** (2013.01 - EP US); **H01L 2924/0002** (2013.01 - EP US)

Citation (applicant)  
• US 3875456 A 19750401 - KANO TSUYOSHI, et al  
• US 2005117334 A1 20050602 - LEE KUN-CHUI [TW], et al  
• EP 1160883 A2 20011205 - MATSUSHITA ELECTRIC IND CO LTD [JP]  
• EP 1753035 A1 20070214 - MATSUSHITA ELECTRIC IND CO LTD [JP]  
• US 2003038596 A1 20030227 - HO WEN-CHIH [TW]

Citation (search report)  
• [X] US 3875456 A 19750401 - KANO TSUYOSHI, et al  
• [XY] US 2005117334 A1 20050602 - LEE KUN-CHUI [TW], et al  
• [X] EP 1753035 A1 20070214 - MATSUSHITA ELECTRIC IND CO LTD [JP]  
• [X] EP 1160883 A2 20011205 - MATSUSHITA ELECTRIC IND CO LTD [JP]  
• [Y] US 2003038596 A1 20030227 - HO WEN-CHIH [TW]  
• [A] US 2006197098 A1 20060907 - AIHARA KENSHI [JP]

Cited by  
CN113809114A; EP2701214A4; CN110610929A; EP3678197A4; US11424396B2; US10147843B2; US11171266B2; WO2017116693A1; WO2010125482A1; WO2015101535A1; US8236582B2; US9722152B2; US11469354B2; EP3036777B1

Designated contracting state (EPC)  
DE FR GB

Designated extension state (EPC)  
AL BA MK RS

DOCDB simple family (publication)  
**EP 1995780 A1 20081126; EP 1995780 B1 20170802**; CN 101325195 A 20081217; CN 101325195 B 20120104; JP 2008294224 A 20081204; JP 5158472 B2 20130306; US 2008290351 A1 20081127; US 2014077237 A1 20140320; US 8742433 B2 20140603; US 9166118 B2 20151020

DOCDB simple family (application)  
**EP 08009482 A 20080523**; CN 200810098406 A 20080526; JP 2007138213 A 20070524; US 12718608 A 20080527; US 201314087075 A 20131122